



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,689	02/10/2004	George Anthony Dunn	HSJ920030091US1	9184

35987 7590 04/05/2006

JOSEPH P. CURTIN
1469 N.W. MORGAN LANE
PORTLAND, OR 97229

EXAMINER

NEGRON, DANIEL L

ART UNIT PAPER NUMBER

2627

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/775,689

Applicant(s)

DUNN ET AL.

Examiner

Daniell L. Negrón

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 5, 9, and 11-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Regarding claims 1, 5, and 9, the recitations "...a length of an unused area between each of the data tracks and a subsequent servo sample is substantially equal to a separation between the read element and the write element as measured along a line that is tangent to a corresponding one of the data tracks." and "...a length of an unused area between each of the data tracks and a subsequent servo sample is proportional to a separation between the read element and the write element as measured along a line tangent to a corresponding one of the data tracks." are considered new matter. Applicant discloses in the specification that the length of an unused area is based on the arc of the rotary actuator, radial position of the read/write head, and the offset between read and write elements, and has failed to provide disclosure to support for a length of an unused area being substantially equal to a separation between read and write elements. Furthermore, Examiner failed to find disclosure for the above recitation in the citation

Art Unit: 2627

provided by Applicant (Figures 5A-5B and page 6, paragraph 27 – page 7, paragraph 29) in the response filed December 14, 2005.

Regarding claims 11-13, the recitation "...writing data tracks on the hard disk so that edges of the data tracks form a radius of curvature that is smaller than a radius of curvature formed by edges of the subsequent servo samples..." is considered new matter. Applicant has failed to provide disclosure to support said claim recitation. Furthermore, Examiner failed to find disclosure for the above recitation in the citation provided by Applicant (Figure 12) in the response filed December 14, 2005.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4, 5, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al U.S. Patent No. 5,682,274 in view of Sugaya et al U.S. Patent No. 4,851,933.

Regarding claim 1, Brown discloses a method for improving the format efficiency of a hard disk of a hard disk drive, the hard disk drive having a rotary actuator and a read/write head (figs. 3-4 and disclosure thereof and column 2, lines 36-45), the read/write head having a read element that is offset from a write element (Fig. 5 and column 5-line 67 through column 6, line 2), the method comprising determining a radial position of the read/write head with respect to the hard disk (Figs. 4-5 and column 5, lines 17-24 and 54-60),

Art Unit: 2627

Brown fails to explicitly teach writing a data track having a length between successive servo sample areas that is substantially equal to a separation between the read element and the write element as measured along a line that is tangent to a corresponding one of the data tracks.

However, Sugaya et al disclose a method wherein a length between servo and data areas is substantially equal to the separation between elements on a read/write head for the purpose of compensating for said separation distance to improve formatting efficiency (column 3, lines 21-33, and column 4, lines 64-68).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the method disclosed by Brown et al with the disclosure of Sugaya et al in order to obtain a method wherein format efficiency and data density is increased by providing unused areas with lengths substantially equal to lengths of the separation between read and write elements.

Regarding claim 4, Brown et al further discloses determining the length of the data track based on an angular position of the rotary actuator (column 4, lines 6-39 and column 6, lines 41-59).

Regarding claims 5 and 8, apparatus claims 5 and 8 are drawn to the apparatus corresponding to the method of using same as claimed in claims 1 and 4. Therefore apparatus claims 5 and 8 correspond to method claims 1 and 4, and are rejected for the same reasons of obviousness as used above.

Regarding claim 9, claim 9 has limitations similar to those treated in the above rejection of claim 1, and are met by the references as discussed above.

Art Unit: 2627

5. Claims 2, 3, 6, 7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al U.S. Patent No. 5,682,274 as modified by Sugaya et al U.S. Patent No. 4,851,933 and further in view of Hrinya et al U.S. Patent No. 6,204,989.

Regarding claims 2 and 3, Brown et al as modified by Sugaya et al disclose a method for improving the format efficiency of a hard disk of a hard disk drive comprising all the limitations of claim 1 as discussed above but fail to explicitly show determining lengths of the data tracks from a look-up table. However, Hrinya et al disclose determining the length of data tracks from a look-up table (i.e., data table, column 8, lines 41-59), and further discloses determining the length of data tracks based on a determination of the arc of the rotary actuator, the determined position of the read/write head with respect to the hard disk, and the physical offset between the read element and write element (column 4, lines 6-39 and column 6, lines 41-59).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the method disclosed by Brown et al as modified by Sugaya et al with the disclosure of Hrinya et al in order to write data at using desired distances and other given variables hence increasing the data density of the hard disk drive.

Regarding claims 6 and 7, apparatus claims 6 and 7 are drawn to the apparatus corresponding to the method of using same as claimed in claims 2 and 3. Therefore apparatus claims 6 and 7 correspond to method claims 2 and 3, and are rejected for the same reasons of obviousness as used above.

Regarding claim 10, claim 10 has limitations similar to those treated in the above rejection of claim 2, and are met by the references as discussed above.

Allowable Subject Matter

6. Claims 11-13 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Prior art fails to disclose or suggest a method and apparatus according to claims 1, 5, and 9, further comprising writing the data tracks on the hard disk so that edges of the data tracks form a radius of curvature that is smaller than a radius of curvature formed by edges of the subsequent servo samples.

Response to Arguments

7. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

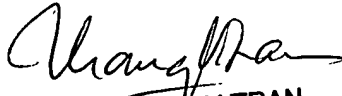
Art Unit: 2627

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniell L. Negrón whose telephone number is 571-272-7559. The examiner can normally be reached on Monday-Friday (8:30am-5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne R. Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DLN 
March 23, 2006


THANG V. TRAN
PRIMARY EXAMINER